

1160 W. Orange Grove Ave., Arcadia, California, U.S.A.
© Copyright 1965

THE LIFE HISTORIES OF TWO SPECIES OF SOUTH AFRICAN EUREMA

GOWAN C. CLARK and C. G. C. DICKSON

Cape Town, South Africa

THE OPPORTUNITY IS BEING taken of publishing in full detail, the life-histories of *Eurema hecabe* (L.) and *E. desjardinsii* (Boisd.), with accompanying colour plates in which all the stages are adequately represented. Material from which the two species were reared was obtained on the coast of Natal (Durban or its neighborhood), while the larvae themselves were reared in Port Elizabeth, Cape Province. The records were completed in 1961 and 1955 respectively.

These butterflies frequent more or less open ground, often close to or amongst bushes and trees, especially grassy spots, and they more usually fly not far above the ground, in the characteristic, rather irregular and not rapid manner, of the genus.

Eurema hecabe (L.) (Fig. 1)

Egg. Eggs are laid singly, tucked between rows of small leaves which, at times, tend to fold over them. They are whitish, 0.45 mm. in diameter by 1.7 mm. in height, with some 50 longitudinal ribs cross-braced by some 55-60 ribs. The ribs are very fine. Eggs hatch after 5 days.

Larva. The young larva eats its way out of the egg near the top. It is 1.5 mm. long and is milk-white. It rests on the stalk bearing the fine leaves and feeds in minute runs on the surface of the latter. The larva grows to 3 mm. and then moults where it is resting, 5 days after emergence.

In the second instar larvae are pale green above and yellowish below. They grow to 5 mm. in 5 days.

In the third instar larvae are pale dull green with a yellowish-white subspiracular line, while the ventral portions are very pale green. Larvae grow to 8.5 mm. in 5 days.

In the fourth instar larvae are a darker green throughout, except for a very pale subspiracular line. They grow to 12.5 mm. in 5 days.

In the final instar larvae are generally the same colour as in the previous instar. (In the second to the final instar there is a dorsal stripe which varies from green to salmon-red, edged with yellow. In some final-instar larvae this is missing.) The final-instar larvae strip all the leaves from a frond and then move on to the next one. They grow to 24.5 mm. in 7-8 days. Larvae spin a silken mat on a stalk, fix their anal-claspers into this and then hang down in a loop and pupate.

Pupa. The pupa is 17.5 mm. in length and is secured by cremastral hooks and a girdle, generally head-up. At first the colour is pale watery green, but this deepens to a dull green with brownish markings. The imago emerges after 12-14 days.

There is a succession of broods throughout the year, at least in warmer localities.

Food-plants: *Hypericum aethiopicum* Thunb. (*Hypericin-ae*); *Cassia mimosoides* (Leguminosae).

Distribution in Southern Africa. Eastern Cape Province and Natal (generally the more coastal portions); S.W. Africa; Bechuanaland; N. and N.E. Transvaal; Rhodesia; Mozambique.

This species (as regards the imago), with its forms, is fully described by van Son (1949) and a good account of its habits, etc. is given by Swanepoel (1953).

***Eurema desjardinsii* (Boisd.) (Fig. 2)**

Egg. Eggs are laid singly, tucked away between the small leaves of the food-plant. The colour is very pale translucent blue at first, changing to dull yellow. They are 0.4 mm. in diameter by 1.25 mm. in height, with some 40 longitudinal ribs, only a third of which reach the micropile. These ribs are cross-braced by some very fine ribs. Eggs hatch after 5-13 days.

Larva. The young larva emerges near the top of the egg. It is 1.5 mm. in length and of a whitish colour with white setae. It rests on the "midrib" of a frond and its presence causes the sensitive leaves to fold over it. As it feeds the green food gives the larva a green appearance. Small troughs are eaten in the leaves. It grows to 3 mm. after some 5-7 days and then moults where it is feeding.

In the second instar the larva is watery green with a divided green dorsal stripe. It grows to 4.5 mm. in 3-6 days, then moults.

In the third instar larvae are pale green with green dorsal and spiracular stripes, below the latter of which is a white stripe. The ventral portions are whitish. Larvae grow to 7.5 mm. in 4-8 days.

In the fourth instar larvae are a darker green with a darker dorsal and spiracular stripes and the ventral portions whitish. They grow to 12 mm. in 6-8 days.

In the final instar larvae are bluish with darker dorsal and spiracular stripes. The white lateral ridge-stripe is very noticeable owing to the ventral parts being bluish. Larvae strip the leaves off the frond, as in the case of the previous species. They grow 22-23 mm. in 8 days, spin a silken mat on a stalk, and after attaching themselves to it spin a girdle and hang downward in a loop and pupate.

Pupa. The pupa is 18-19 mm. in length and is at first almost transparent pale green. Emergence occurs after some 20 days.

There is a succession of broods in the warmer localities.

Food-plant: *Cassia mimosoides* (Leguminosae).
(The first food-plant given for *Eurema hecabe* would, no doubt, be eaten also by the larva of *E. desjardinsii*.)

Distribution in Southern Africa. This appears to be much the same as for *Eurema hecabe*. In Natal, *E. desjardinsii* is the commoner species of the two and it possibly extends further inland than does *E. hecabe*.

For further information on the butterfly, van Son (1949) and Swanepoel (1953) may be consulted.

REFERENCES

- PINHEY, E. C. G. 1949. Butterflies of Rhodesia. Salisbury, Rhodesia.
PLATT, E. E. 1921. List of food-plants of some South African Lepidopterous larvae, *S. Afr. Journ. Nat. Hist.*, 3: 65-138, June, 1921.
SEITZ, ADALBERT. 1925. The Macrolepidoptera of the World, Vol. XIII. Stuttgart.
SWANEPOEL, D. A. 1953. Butterflies of South Africa. Cape Town.
TRIMEN, ROLAND AND BOWKER, JAMES HENRY. 1889. South African Butterflies, Vol. III. London.
VAN SON, G. 1959. The Butterflies of Southern Africa, Part I, Papilionidae and Pieridae. Pretoria, South Africa.

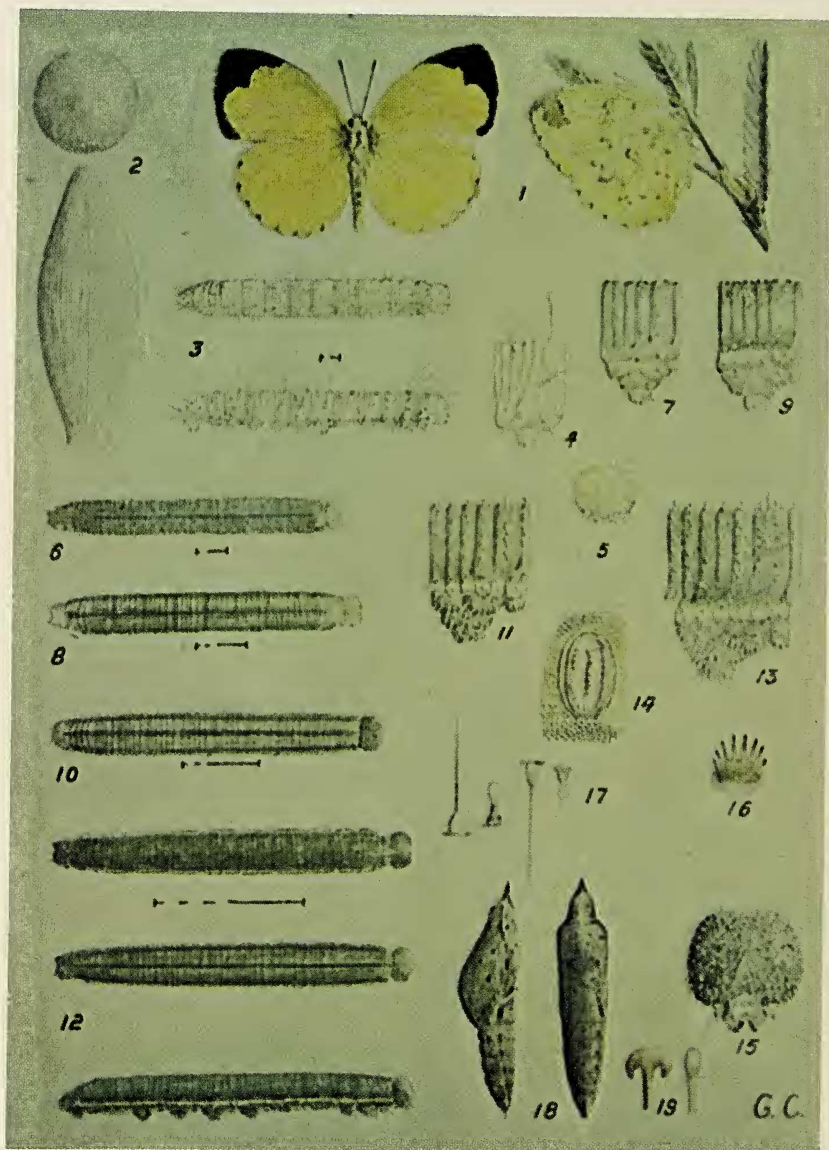


Fig. 1. *Eurema hecabe*. 1. Imago; 2. Egg; 3. Larva, 1st instar; 4. 7th Segment, 1st instar; 5. Head, 1st instar; 6. Larva, 2nd instar; 7. 7th Segment, 2nd instar; 8. Larva, 3rd instar; 9. 7th Segment, 3rd instar; 10. Larva 4th instar; 11. 7th Segment, 4th instar; 12. Larva final instar; 13. 7th Segment, final instar; 14. Spiracle; 15. Head final instar; 16. Anal comb; 17. Setae, much enlarged; 18. Pupa, cremastral hooks much enlarged; Food Plant: *Cassia mimosides*.

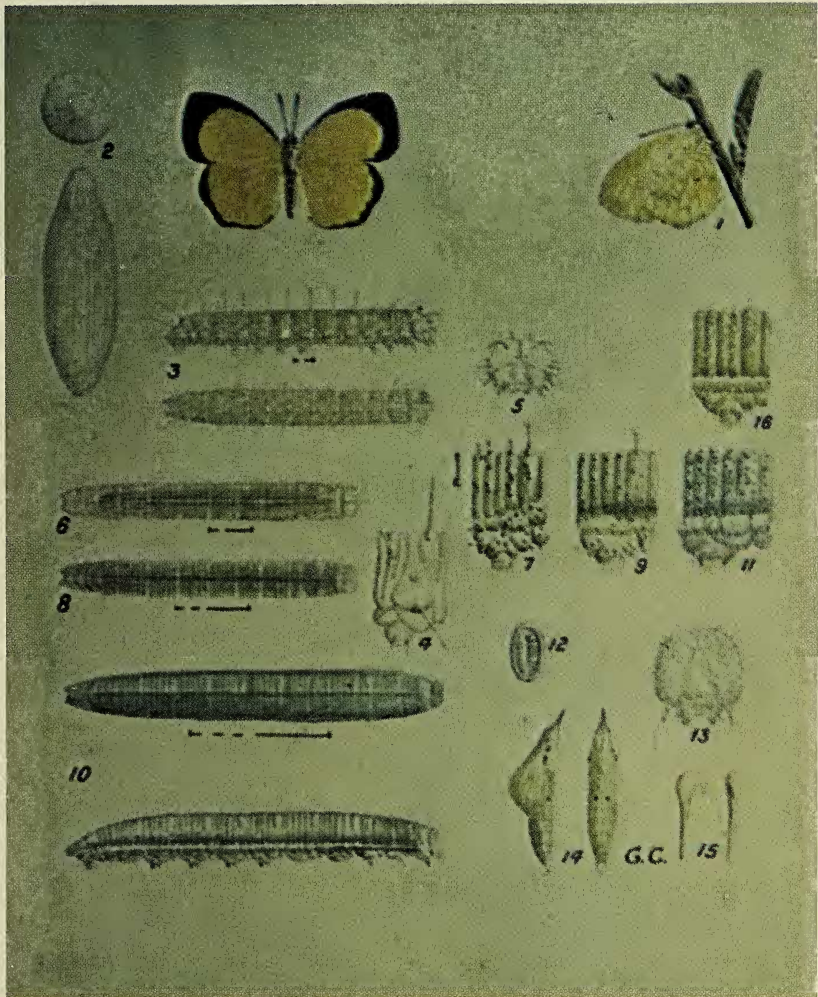


Fig. 2. *Eurema desjardinsi*. 1. Imago; 2. Egg; 3. Larva on hatchings; 4. 7th Segment, 1st instar; 5. Head, 1st instar; 6. Larva, 3rd instar; 7. 7th Segment, 2nd instar; 8. Larva, 4th instar; 9. 7th Segment, 4th instar; 10. Larva, final instar; 11. 7th Segment final instar; 12. Spiracle enlarged; 13. Head, final instar; 14. Pupa; 15. Cremastral hooks much enlarged; 16. 7th Segment, 3rd instar; Food Plant: *Cassia mimosides*.